

SAMMAMISH RIVER CORRIDOR ACTION PLAN



FINAL REPORT

September 2002

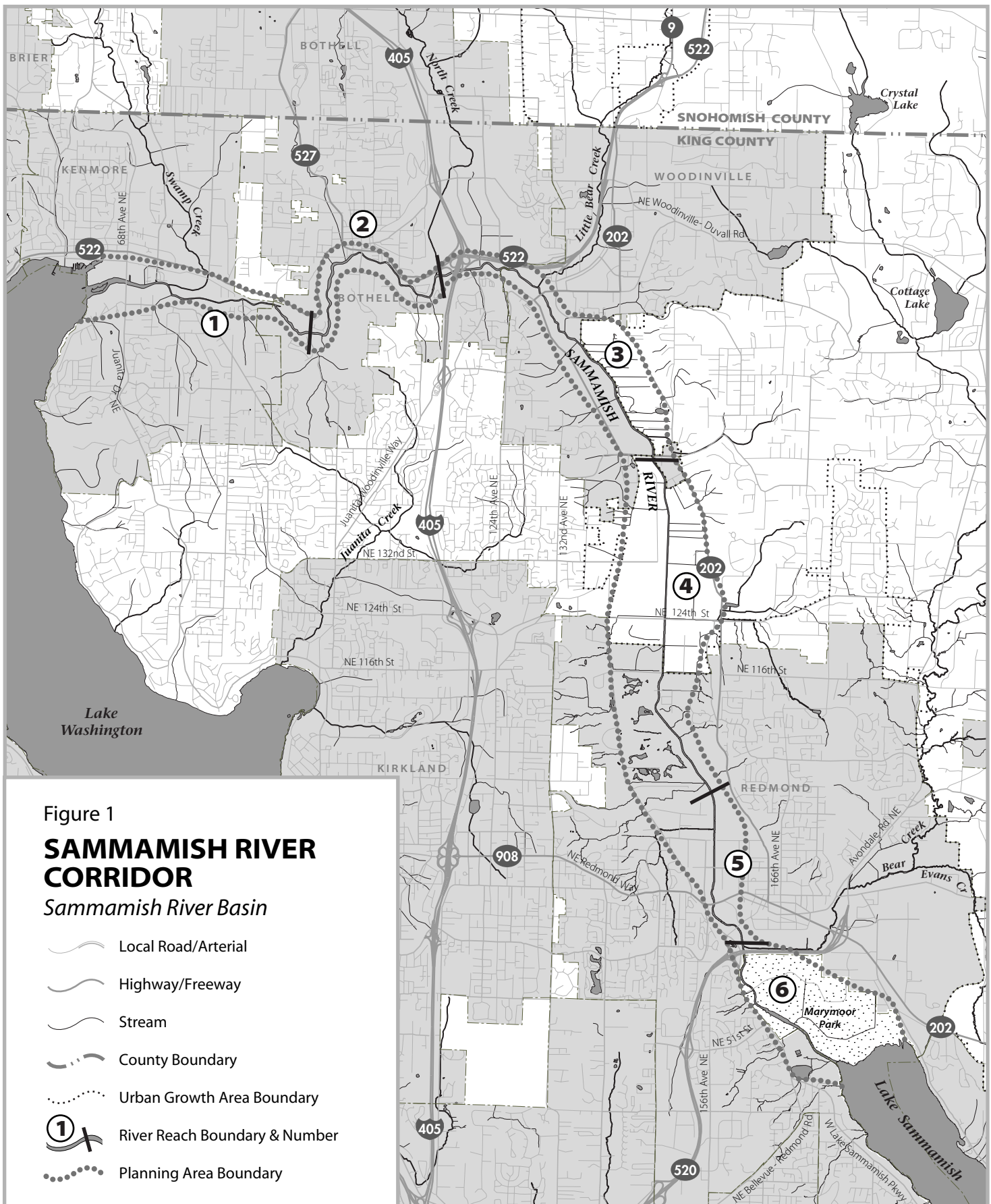


US Army Corps
of Engineers
Seattle District

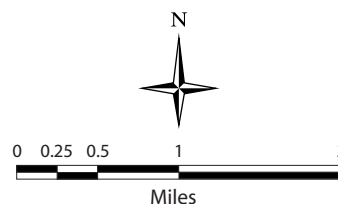


King County

Department of Natural Resources and Parks
Water and Land Resources Division



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Table 1. (Continued)		
Western toad	Northern goshawk	Red-winged blackbird
Pacific treefrog	Red-tailed hawk	Western tanager
Red-legged frog	Osprey	Finches (American, pine siskin, red crossbill, purple)
Spotted frog	American kestrel	

NATIVE AMERICAN PRESENCE AND USE OF THE SAMMAMISH RIVER CORRIDOR

All information in this section is summarized from Buerge (1984) and Stickney and McDonald (1977). The Lake Washington basin was highly productive of fish, birds, mammals, and a variety of edible plants and several native winter villages were located along the Lake Washington lakeshore and adjacent to tributaries including the Sammamish River. There was also extensive native use of Lake Sammamish. A village was located at the mouth of Sammamish River and was known to be occupied by the “willow people” as described by early European settlers. There are also extensive archaeological sites in and adjacent to Marymoor Park at the upper end of the river. The native tribe around Lake Sammamish was generally known to the settlers as the Squak people (the Sammamish River was called Squak Slough). It is unknown, however, if winter villages were present in the Sammamish valley because of the frequent flooding that occurred. It is likely there were summer camps and other uses by native Americans because of the extensive fish runs that used the corridor. There could have been more extensive use of the corridor by tribal populations than was noted by early settlers because many native peoples are believed to have been decimated by smallpox and other diseases as a result of early trappers and explorers (Hudson Bay Company, etc.), prior to most settlement.

HUMAN-INDUCED CHANGES TO THE RIVER AND BROADER WATERSHED

From the time the first European settlers began moving into the Sammamish Valley to the present day, significant changes have occurred to the system’s hydrology, floodplain, and aquatic and terrestrial habitats. The first settlers moved into the valley in the 1870s (Stickney and McDonald, 1977) and almost immediately began clearing the upland forest for both timber and farmland. The Sammamish River was a major route for transporting logs down to Kenmore and across Lake Washington. The heaviest logging activity occurred from the 1880s through about 1900. In photos around 1903 (Stickney and McDonald, 1977), the valley and surrounding hillsides are nearly devoid of trees.

Following the logging boom, more and more settlers moved into the valley for farming and other ventures. As early as 1892 (King County Testimony and Petitions 10/12/1895; 9/26/1892; 3/20/1895; 8/20/1892; 9/21/1892; 1/11/911), the settlers were trying to form a drainage district and straighten and deepen the river channel to its approximate existing alignment (see Figure 2). Landowners downstream of Hollywood were opposed to initiation of the drainage district because they would be taxed and thought deepening the river would not solve their continuing flooding problems due to backwater conditions from Lake Washington. These landowners advocated lowering Lake Washington as a better alternative. When plans for building the Lake Washington Ship Canal were initiated in 1910 by the Corps of Engineers, King County, and the City of Seattle, there was an initial plan to appropriate \$25,000 for deepening the Sammamish River to coincide with the lake lowering (Stickney and McDonald 1977). The deepening plan did not come to fruition, however, and a drainage district was formed in 1911 (King County 1911). Residents considered the debris jams and sand and gravel bars within the river as unreasonable restrictions on navigation and other uses and subsequently began the process of widening and “brush” removal.

The locks and Lake Washington Ship Canal were completed in 1917, and Lake Washington was slowly lowered about 9 feet (2.7 m) over the construction period, with a subsequent drop in Lake Sammamish elevation of approximately 6 feet (1.8 m). Ajwani (1956) states that following the lowering of the lake, the

Sammamish River had a stronger current, and many areas of the valley floor that were formerly submerged or otherwise wet were drained and placed under cultivation. The drainage districts continued to implement incremental straightening and deepening projects throughout the Redmond to Woodinville reach, primarily in the early 1920s. By 1938 (USACE map 1938), the river essentially existed in its current alignment, and the majority of the floodplain was under agricultural production; however, portions of the old channel alignment still existed as shrub wetland habitat (King County aerial photos ~1940). The river was also dredged sometime before 1950 (Ajwani 1956) to provide navigation for small boats. It is unclear who conducted the dredging (possibly the drainage district or King County). Ajwani (1956) considered the dredging to have destroyed habitat for trout and salmon, which included spawning habitat in several areas of the river, with the higher gradient from the lowered lake level.

In spite of these significant alterations, the Sammamish floodplain still experienced a high groundwater table and frequent flooding that impeded early season crops and made much of the floodplain undesirable for residential or commercial development. In the 1950's King County requested that the Corps investigate a flood control project to prevent spring flooding of croplands (USACE, 1962). The Corps undertook a feasibility study that recommended deepening of the river to facilitate drainage and to contain flows up to a 40-year event after March 1.² The Corps completed this project in 1964, which deepened the river by approximately 5 to 10 feet and also included minor straightening near North Creek (for Highway 522 construction) and elimination of a couple of meanders upstream of Woodinville. A levee was also constructed along lower North Creek. The dredged material was typically sidecast to fill in low spots (probable wetlands) and form short berms along the banks, providing additional flood protection that exceeded the design event in some areas. During construction, essentially all riparian vegetation was removed, and the design standard was for a grass-lined channel, which King County is obligated to maintain. This was the final major alteration to the river channel, to date. There is no levee system along the Sammamish River, but rather areas of sidecast material from the channel improvement project that filled in low elevation floodplain areas. Rock bank protection was also placed as part of the Corps/King County project to protect bridges and some banks, in approximately 50% of the channel.

Following completion of the Corps/King County flood control project, the floodplain gradually began to transition from agricultural use to residential, commercial, and industrial uses. A significant proportion of the former floodplain is now developed (estimated at ~45%; not including agriculture or park lands). Based on the comprehensive plans of King and Snohomish Counties and associated cities approximately 57% of the overall Sammamish watershed is planned for urban growth (King County Office of Regional Policy and Planning 2001; Snohomish County Department of Planning and Development Services 2000). The Swamp and North Creeks sub-basins are almost entirely planned for urban growth (Swamp Creek 100% and North Creek 99%). Much less of the Bear and Little Bear Creeks sub-basins are planned for urban growth--only 20% and 28%, respectively. Continued development will restrict restoration options in the future and could reduce existing high quality habitats without specific public acquisition or restoration actions.

In summary, the Sammamish River Corridor has undergone dramatic alterations since settlement began in the 1870s. Alterations include major hydrologic changes (lake lowering and channel deepening); urban, industrial, and agricultural development in the river corridor and surrounding watershed; timber harvest; stocking of non-native fish species; construction of in-channel structures such as weirs; channel realignment; and filling of remnant oxbows and floodplain areas. These alterations have eliminated most floodplain and wetland habitat in the corridor and seriously degraded riparian and in-stream habitat for fish and wildlife. The following chapter describes these existing conditions in more detail.

² The significance of the 40 year design event for flows after March 1st, is that the project was never designed to control winter flooding, only to facilitate crop growing in the springtime. Some flood control benefits have accrued to floodplain landowners over the years, particularly because portions of the channel may provide slightly higher protection than was originally designed (L. Smith & J. Lencioni, Corps of Engineers, pers. comm. 1999).